

REMARKS

Please reconsider the rejections of the claims in light of the foregoing amendments and the following arguments and allow the pending claims.

A. Rejection of claim 28 under 35 U.S.C. § 112, second paragraph, as being indefinite for having an improper claim dependency.

In the present Office Action, the Examiner rejected claim 28 under 35 U.S.C. § 112 as being indefinite for depending from the wrong claim. The Examiner stated that claim 28 should be dependent from claim 24 and not claim 27.

As suggested by the Examiner, Applicants have amended claim 28 to depend from claim 24, thereby mooting the rejection under 35 U.S.C. § 112. Therefore, the Examiner is respectfully requested to withdraw the rejection of claim 28 under 35 U.S.C. § 112.

B. Rejection of claims 18-23 and 29 under 35 U.S.C. § 102(e) as being anticipated by Williamson, *et al.*

The Examiner rejected claims 18-23 and 29 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,274,041 to Williamson, *et al.* ("Williamson"). Per the Examiner, to the extent that Williamson discloses a third filter step, it does not negate the teaching of a two step filtration process, and thus, the language "consisting essentially of" does not overcome the rejection under § 102(e).

In the response of June 5, 2003 and in the present response, Applicants have amended claim 18 to make it explicit that claim 18 encompasses a filtering process consisting essentially of the two filtering stages of a first stage that removes microorganisms and a second stage that is activated carbon. Applicants contend that

through the use of the 'closed-ended' preamble of consisting essentially of, the two-stage filtering process of claim 18 is novel in light of Williamson's three-stage filter.

The preamble, "consisting essentially of" closes a claim to unrecited steps that would change the fundamental character of the claimed invention. See Ak Steel Corp. v. Sollac, 234 F. Supp. 2d 711 (S.D.Ohio 2002) and MPEP 8th Edition, § 2111.01. For example, one case has commented that in a claim having three elements, a prior art disclosure of four elements does not anticipate the three element claim if the additional (fourth) element changes the fundamental character of the three element invention.

With regards to the patentability of claim 18 in the present application, the addition of further filtering stages to the presently claimed two stage filtering invention would materially effect the fundamental character of the claimed invention. The fundamental and basic properties of the presently claimed invention can be summarized as two filtering stages arranged in a sequence that ensures the activated carbon filtering stage remains free of bacterial growth. Any additional filtering stages taught by the prior art would materially affect the fact that Applicants accomplish this result for the first time using only two filtering stages.

For example, the benefits of using two filtering stages, instead of three or more, include reduced costs, improved flow rates of the purified water, lowered weight of the filtering apparatus, simpler design of the overall process/apparatus, smaller sized filtering units, extended lifespan of the filtering apparatus, and a lessened chance for filter clogging. Additional filtering stages would likely have a negative impact on one or more of these benefits. Accordingly, Applicants' use of "consisting essentially of" excludes prior art disclosures of three or more filtering stages because they would

materially affect the basic and novel properties of the presently claimed two filtering stage invention.

Therefore, the Examiner is respectfully requested to withdraw the rejection of claims 18-23 and 29 under 35 U.S.C. § 102(e) as being anticipated by Williamson.

C. Rejection of claims 18, 20, and 22-29 under 35 U.S.C. § 102(b) as being anticipated by any of Klein, Pall, Galbiata, Kuh, Bray, Bosko or Sabo.

The Examiner rejected claims 18, 20, and 22-29 under 35 U.S.C. § 102(b) as being anticipated by any of U.S. Patent No. 3,705,651 to Klein, U.S. Patent No. 3,327,859 to Pall, U.S. Patent No. 4,595,500 to Galbiati, U.S. Patent No. 4,681,677 to Kuh, U.S. Patent No. 4,711,723 to Bray, U.S. Patent No. 5,004,535 to Bosko or U.S. Patent No. 3,372,808 to Sabo.

Again, Applicants contend that through their use of the 'closed-ended' preamble of consisting essentially of, the two stage filtering process of claim 18 is novel in light of the three or more stage filters taught by Klein, Pall, Galbiata, Kuh, Bray, Bosko and Sabo.

For instance, Klein discloses three filtering stages, namely a body of mineral material, a stage of activated carbon and a stage of diatomaceous earth. Pall discloses three and/or four filtering stages, including an optional (metal) external stage coarse filter, a corrugated filter element, a sorbent bed, and a porous nylon disc. Galbiata discloses three filtering stages in the form of a bacteria hold-back membrane, an active carbon zone, and a felt filtering disk. Kuh discloses three filtering stages in the form of a submicron filter, an adsorbent material, and a top filter. Bray discloses three filtering

stages in the form of a reverse-osmosis filter element, an activated carbon stage, and a woven, porous, cloth-like material subsequent to the activated carbon stage. Bosko discloses three filtering stages in the form of a prefilter component, a reverse-osmosis membrane component, and a post filter component. Finally, Sabo also discloses three filtering stages in the form of a silver-impregnated diatomaceous earth ceramic filter, a bed of activated carbon, and a mixture of an ion-exchange resin.

Because these references individually teach more than two filtering stages, they cannot anticipate the presently claimed invention of claim 18 for the same reasons stated above. Therefore, the Examiner is respectfully requested to withdraw the rejection of claims 18, 20, 22 and 23 under 35 U.S.C. § 102(b) as being anticipated by any of Klein, Pall, Galbiata, Kuh, Bray, Bosko or Sabo.

With regards to the patentability of claim 24, Applicants have amended claim 24 and canceled claim 26 to clarify that the third filtering step is accomplished using a microfiber glass web. Applicants contend that none of the cited references teach a third filtering stage that removes sediments and some organics prior in flow to a second filtering step, wherein said third filtering step is accomplished using a microfiber glass web.

For example, Pall discloses an optional (metal) external stage coarse filter that is followed by a glass fiber corrugated filter element, an activated carbon bed, and a porous nylon disc. Pall fails to teach a microfiber glass third stage because, instead, it teaches a glass fiber first stage. Thus, Pall cannot teach a third stage microfiber glass web in addition to a first stage that removes microorganisms and which are both prior in flow to a second stage of activated carbon stage.

Therefore, the Examiner is respectfully requested to withdraw the rejection of claims 24, 25, and 27-29 under 35 U.S.C. § 102(b) as being anticipated by any of Klein, Pall, Galbiata, Kuh, Bray, Bosko or Sabo.

D. Rejection of claims 19 and 21 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 3,327,859 to Pall in combination with any one of U.S. Patent No. 4,523,995 to Pall or Cotton or WO98/04335

Finally, the Examiner had rejected claims 19 and 21 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 3,327,859 to Pall (Pall'859) in combination with any one of U.S. Patent No. 4,523,995 to Pall (Pall'995) or U.S. Patent No. 5,688,588 to Cotton (Cotton) or WO98/04335. Applicants submit that the rejections of claims 19 and 21 under 35 U.S.C. § 103(a) have been mooted in light of the amendment of "consisting essentially of" to claim 18.

Even if one of ordinary skill in the art were to combine Pall'859 with any one of Pall'995 or Cotton or WO98/04335, such a combination would still not meet the two filtering stage limitation in claim 18 and the additional limitations found in claims 19 and 21 of the present application. The prior art reference or combination of references must teach or suggest each and every one of the limitations of the claim. In re Wilson, 165 U.S.P.Q. 494 (C.C.P.A. 1970).

For example, as discussed above, Pall'859 discloses more than two filtering stages, including a corrugated filter element, a sorbent bed of activated carbon, and a porous nylon disc. Pall'859 also fails to recognize that having a first filter stage prior to a second filter stage comprising activated carbon ensures that the activated carbon remains free of bacterial growth. Instead, Pall'859 discloses that a bactericidal

composition applied to the first filter stage will “kill the bacteria thus removed, preventing growth of colonies of pent-up bacteria on the filter element.” See Pall, col. 5, lines 39-43. Therefore, Pall’859 prevents bacterial growth on the first filter element, while the present application is directed to solving the problem of preventing bacterial growth in the activated carbon of the second filter stage. This is a significant problem in the art because microbial growth within the activated carbon stage (second stage) may result in the transfer of harmful microorganisms to the end user.

Pall’995 fails to disclose the claim 18 limitation of removing at least a portion of the microorganisms from said liquid supply in a first filtering step; and then removing at least a portion of the organics and other non-biological components in a second filtering step using activated carbon.

Cotton teaches that the first filtering stage may “further include one or more other materials including, for example . . . activated carbon . . .” See Cotton, col. 1, lines 63-37. Thus, the only instance where Cotton addresses “activated carbon” is by mixing activated carbon into the first filtering stage. Therefore, Cotton cannot teach removing at least a portion of the microorganisms from said liquid supply in a first filtering step; and then removing at least a portion of the organics and other non-biological components in a second filtering step using activated carbon. Cotton also fails to recognize that having a first filter stage prior to a second filter stage that is activated carbon, as required by the present application, ensures that the activated carbon remains free of bacterial growth. Instead, Cotton addresses the removal of microorganisms within a first filtering stage that is mixed with activated carbon. Cotton fails to address the problem of removing microorganisms prior to their contacting the

activated carbon second stage. The present application addresses and solves this unique problem.

WO98/04335 fails to make any mention of a second filtering stage using activated carbon. WO98/04335 also fails to address the problem of removing microorganisms prior to their contacting an activated carbon filtering stage.


The combination of Pall'859 with any one or more of Pall'995, Cotton, or WO98/04335, would simply not provide each and every one of the limitations now found in claims 19 and 21. Therefore, it is respectfully requested that the Examiner withdraw the 35 U.S.C. § 103(a) rejection of claims 19 and 21.

In summary, in view of the foregoing arguments and amendments, we respectfully submit that the rejected claims are patentably distinct over the references cited by the Examiner and meet all other statutory requirements. We believe that the present Application is now in complete condition for allowance and, therefore, respectfully request the Examiner to reconsider the rejections in the Office Action and allow this Application. We invite the Examiner to telephone the undersigned should any issues remain after the consideration of this response.

Respectfully requested,

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